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PHOTOGRAPHIC
INTERPRETATION
REPORT

NATIONAL PHOTOGRAPHIC
INTERPRETATION CENTER

LAUNCH INDICATORS IDENTIFIED DURING 1977 LAUNCH ACTIVITY AT CHING-YU MISSILE TEST COMPLEX SSM, CHINA (S)

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NOCONTRACT	Not Releasable to Contractors or Contractor/Consultants
PROPIN	Caution-Proprietary Information Involved
USIBONLY	USIB Departments Only
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LAUNCH INDICATORS IDENTIFIED DURING 1977 LAUNCH ACTIVITY AT CHING-YU MISSILE TEST COMPLEX SSM, CHINA (S)

ABSTRACT

1. (TSRU) This report summarizes the recent launch activity observed at Ching-yu Missile Test Complex SSM, China. Activity at Ching-yu ICBM Test Site, the research and development elevate-to-launch test silo for the CSS-3 ICBM, which led up to an unsuccessful launch of a CSS-3 missile followed by a successful launch is discussed in this report. Preparations for the successful launch included deactivation of the silo, apparent removal of the launcher assembly, and installation of a new launcher.

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BACKGROUND

3. (TSR Ching-yu Missile Test Complex SSM is in northeast China, approximately 6 nautical miles (nm) southeast of Ching-yu and 1,200 nm east of Shuang-cheng-tzu Missile Test Range Complex SSM Ching-yu ICBM Test Site is the research and development elevate-to-launch test silo for the CSS-3 ICBM. This report describes activity at the test site which led up to an unsuccessful launch followed by a successful launch

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4. (TSR The launches were the fifth and sixth from Ching-yu. The previous launch occurred Following the August 1976 launch, the silo test site was refurbished or modified the missile launcher had been removed from the silo. Portions of the umbilical tower, two halves of the service platform, and the missile support ring were observed at the silo and the nearby support area. the launcher had apparently been reassembled and placed in the silo, since the individual components were no longer observed. The next step in making the silo launch capable again is normally the checkout of the reassembled launcher and elevator using the checkout fixture. Preparations for this action appeared to be underway as early when the silo checkout fixture and the CSS-3 first- and second-stage transporters were observed in the missile checkout and assembly support area (Ching-yu SSM Support Facility, The first- and second-stage transporters have been used to transport the checkout fixture, which is probably installed in the silo to test the launcher assembly and elevator.[4]

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DESCRIPTION

30 September Launch Preparations

Activity at Test Site

5. (TSR) The checkout procedure was probably begun at the ICBM test site when the checkout fixture was removed from the checkout and assembly area and probably placed in the silo. a truck-mounted crane and a silo service crane were observed on the silo apron.

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6. (TSR) the silo checkout fixture was removed from the silo and placed on the silo apron. Some problem with the launcher was apparently encountered because the service platform halves (Figure 2A) and other components of the launcher were observed at the silo support area the checkout fixture was no longer on the silo apron. Apparently a new launcher assembly had been installed and the checkout fixture was again placed in the silo to check out the new launcher. the checkout procedure had been completed and the fixture had been returned to the missile checkout and assembly area, indicating that the silo was again launch capable. The silo door was open on this date, and it was determined The launch stand and elevator were probably at the bottom of the silo. During the remainder of September, the silo area was observed the silo door was closed the silo service crane was moved off the silo apron and positioned near the tower structure east of the silo. The crane remained there for the rest of the month and was in the same position on postlaunch

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The presence of a second launcher was confirmed At that time, the new launcher assembly was in the raised position at the silo; the other launcher assembly was still in the site support area.

Transporter Activity

7. (TSR) From May to mid-August, the CSS-3 first- and second-stage transporters remained in the missile checkout and assembly area a majority of the time. the transporters were observed to be canvas covered the transporters (Figure 4A) had been moved from the area and were observed in convoy with several other vehicles on the road near the headquarters area (Ching-yu SSM Headquarters General, The transporters were probably being returned to the checkout and assembly area after the missile had been picked up at the rail transfer point. During most of September, the transporters were in the checkout and assembly area without their canvas covers. the transporters were again observed to be canvas covered (Figure 4B). Presumably the prelaunch checkout of the missile had been completed and it was ready to be transported to the silo area for loading.

Electronics Activity

8. (TSR Of the two electronics areas at Ching-yu, only Electronics Area 2 was observed occupied with electronics vans and trailers during the launch preparations. a partial deployment was observed when five electronics vans were seen at the circular pad area; four vans were in front and one was in back (Figure 5A). A canvas cover was over each set of vehicles in the front row. Electronics Area 2 was fully occupied some time the canvas covers had been removed; and six electronics trailers were in position near the circular pad area (Figure 5B).

VIP Activity

9. (TSR) When a launch is planned at Ching-yu, it is not unusual for important persons (VIPs) to be there. The presence of VIPs was suspected when a helicopter (Table 1) was observed in the headquarters area and when a bus was observed at the silo area. A number of placards were also observed throughout the area

Propellant Activity

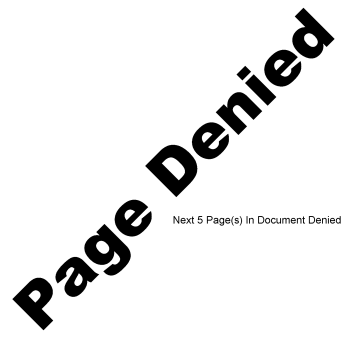
10. (TSR) During the launch cycle, the delivery of propellants to the launch site was not observed. Seven to nine propellant vehicles, which would ultimately deliver the fuel, were at the barracks area southeast of the launch site. The propellants for the CSS-3 missile are storable, so they were probably delivered to the launch site at an earlier date when coverage was not available.

Rehearsal Activity

Launch Summary

12. (TSR Preparations were underway for approximately a year prior to the launch failure at Ching-yu. In October 1976, the launcher was observed disassembled and the silo deactivated for the first time; however, by January 1977 the launcher had apparently been refurbished and reassembled. Early checkout preparations were indicated as early as February; the actual silo checkout probably occurred in May and June. Imagery of late July and August indicated that the Chinese had encountered a problem with the launcher causing a delay in launch plans. A new launcher was probably installed in the silo in mid-August and the silo was again checked out by early September. Postlaunch imagery confirmed the presence of a second launcher assembly.

13. (TSR) the removal of the old launcher assembly or the installation of the new one was not observed. This would indicate that a launcher assembly can be removed or installed in a short period of time, perhaps in a few days. In addition, no missile was observed in the open silo although canvas-covered transporters were seen in the checkout and assembly area The missile may have been transported from the checkout and assembly area and then loaded into the silo in just one day for the launch.



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22 November Launch Preparations

14. (TSR) After the launch, preparations for another launch were indicated by both imagery

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15. (TSR) At the test site, the silo service crane was moved back onto the apron and remained there until it was moved off the apron The crane was removed 14 to 20 days prior to the November launch, which compares favorably to its removal nine to 15 days before the September launch. The silo door was observed closed the door was open and again on postlaunch coverage when the launcher assembly was seen in the raised position at the silo.

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16. (TSR) Electronics area 2 was observed only the area was partially occupied with six electronics vans at the circular pad. A large increase in the number of placards was observed throughout the area on prelaunch coverage At the checkout and assembly area, the transporters were absent but remained in the area Seven to nine propellant vehicles were in the barracks area.

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CONCLUSIONS

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REFERENCES

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REQUIREMENT

Project 121300NE

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List of Conversion Factors by Classification

UNITS OF LENGTH

IF YOU HAVE	*MULTIPLY BY*	*TO OBTAIN*
MILLIMETERS	0.0394	INCHES
CENTIMETERS	0.3937	INCHES
INCHES	25.4000	MILLIMETERS
INCHES	2.5400	CENTIMETERS
FEET	0.3048	METERS
FEET	0.0003	KILOMETERS
YARDS	0.9144	METERS
METERS	3.2808	FEET
METERS	0.0005	MILES(NAUTICAL)
METERS	1.0936	YARDS
KILOMETERS	3280.8400	FEET
KILOMETERS	0.6214	MILES(STATUTE)
KILOMETERS	0.5400	MILES(NAUTICAL)
MILES(STATUTE)	1.6093	KILOMETERS
MILES(NAUTICAL)	6076.1154	FEET
MILES(NAUTICAL)	1.8520	KILOMETERS
MILES(NAUTICAL)	1852.0000	METERS

UNITS OF AREA

IF YOU HAVE	*MULTIPLY BY*	*TO OBTAIN*
SQUARE CENTIMETERS	0.1550	SQUARE INCHES
SQUARE INCHES	6.4516	SQUARE CENTIMETERS
SQUARE FEET	0.0929	SQUARE METERS
SQUARE YARDS	0.8361	SQUARE METERS
SQUARE METERS	10.7639	SQUARE FEET
SQUARE METERS	1.1960	SQUARE YARDS
SQUARE METERS	1.0000	CENTARES
SQUARE METERS	0.0002	ACRES
SQUARE METERS	0.0001	HECTARES
ACRES	4046.8564	SQUARE METERS
ACRES	0.4047	HECTARES
HECTARES	10000.0000	SQUARE METERS
HECTARES	2.4711	ACRES

UNITS OF MASS

IF YOU HAVE	*MULTIPLY BY*	*TO OBTAIN*
KILOGRAMS	2.2046	POUNDS(AVOIR.)
POUNDS(AVOIR.)	0.4536	KILOGRAMS
SHORT TONS	0.9072	METRIC TONS
METRIC TONS	1.1023	SHORT TONS
METRIC TONS	0.9842	LONG TONS
LONG TONS	1.0160	METRIC TONS

UNITS OF VOLUME

IF YOU HAVE	*MULTIPLY BY*	*TO OBTAIN*
LITERS	0.2642	GALLONS
LITERS	0.0063	BARRELS(POL)
LITERS	0.0010	CUBIC METERS
GALLONS	3.7854	LITERS
GALLONS	0.1337	CUBIC FEET
GALLONS	0.0238	BARRELS(POL)
GALLONS	0.0038	CUBIC METERS
BUSHELS	0.0352	CUBIC METERS
CUBIC FEET	7.4805	GALLONS
CUBIC FEET	0.1781	BARRELS(POL)
CUBIC FEET	0.0283	CUBIC METERS
CUBIC YARDS	0.7646	CUBIC METERS
BARRELS(POL)	158.9873	LITERS
BARRELS(POL)	42.0000	GALLONS
BARRELS(POL)	5.6146	CUBIC FEET
BARRELS(POL)	0.1590	CUBIC METERS
CUBIC METERS	1000.0000	LITERS
CUBIC METERS	264.1721	GALLONS
CUBIC METERS	35.3147	CUBIC FEET
CUBIC METERS	28.3776	BUSHELS
CUBIC METERS	6.2898	BARRELS(POL)
CUBIC METERS	1.3080	CUBIC YARDS

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